

Reading Quiz

Date 9/5/8

This quiz asks about the material as Feynman presents it (e.g. Feynman's view). All other views (e.g. your personal, or your high-school teacher's) are irrelevant to this quiz.

Reading: Feynman, Vol-1, page 37-1 – 37-12

1) According to Feynman, the “particle-wave duality” for electrons (and other matter) can be reconciled by recognizing that

- a) Electrons are decidedly “particles”.
- b) Electrons are decidedly “waves”.
- c) Electrons are like both particles and waves simultaneously.
- d) Electrons are like neither particles nor waves.

True or false (write “T” or “F” in the blank space):

1. A single electron is shot at the slits in the “double-slit” experiment. The best we can do with QM now is to predict where the electron will arrive on the screen behind the slits by giving the probability.

_____ Feynman thinks that it will be possible, with new theories in the future, to predict exactly where on the screen a single electron arrives by uncovering the internal works of the electron and by specifying the so called “inner variables.”

2. When several electrons are shot through a double slit, the distribution of the position for their arrival on a screen looks like that of an “interference pattern.”

_____ It might be possible (in principle) to specify for each electron which slit it has gone through, without destroying the interference pattern.